

Amendments to the Claims

1. (Currently Amended): A method of forming a capacitor, comprising:

forming a conductive metal nitride comprising first electrode layer over a substrate, the conductive metal nitride being oxidizable to a higher degree at and above an oxidation temperature of 300°C as compared to any degree of oxidation below the oxidation temperature of 300°C;

feeding at least one oxygen containing vapor precursor to the conductive metal nitride comprising first electrode layer below the 300°C oxidation temperature under conditions effective to form a first portion oxide material comprising aluminum oxide of a first density of a capacitor dielectric region over the conductive metal nitride comprising first electrode layer;

feeding at least one oxygen containing vapor precursor over the first portion at a temperature above the 300°C oxidation temperature effective to form a second portion oxide material comprising aluminum oxide of a second density of the capacitor dielectric region over the first portion, the oxide comprising material of the first portion and the oxide material of the second portion being common in chemical composition and the second density being greater than the first density; and

forming a conductive second electrode layer over the second portion oxide material of the capacitor dielectric region.

2. (Original): The method of claim 1 wherein the first and second portions are formed from a common vapor precursor.

3. (Withdrawn): The method of claim 1 wherein the first and second portions are formed from different precursors.

4. (Original): The method of claim 1 wherein the first and second portions are formed by chemical vapor deposition.

5. (Original): The method of claim 1 wherein the first and second portions are formed by chemical vapor deposition using at least one common vapor precursor.

6. (Original): The method of claim 1 wherein the first and second portions are formed by chemical vapor deposition respectively comprising feeding multiple vapor precursors simultaneously to the substrate.

7. (Original): The method of claim 1 wherein the first and second portions are formed by chemical vapor deposition respectively comprising feeding common multiple vapor precursors simultaneously to the substrate.

8. (Withdrawn): The method of claim 1 wherein the first and second portions are formed by atomic layer deposition.

9. (Currently Amended): The method of claim 1 wherein the first portion is formed on the conductive metal nitride comprising first electrode layer.

10. (Original): The method of claim 1 wherein the second portion is formed on the first portion.

11. (Currently Amended): The method of claim 1 wherein the first portion is formed on the conductive metal nitride comprising first electrode layer, and the second portion is formed on the first portion.

Claim 12. (Canceled).

13. (Original): The method of claim 1 wherein the first portion is formed to a thickness which is less than that of the second portion.

14. (Original): The method of claim 1 wherein the first portion is formed to a thickness which is no greater than one-third that of the second portion.

15. (Original): The method of claim 1 wherein the first portion is formed to a thickness which is no greater than one-fifth that of the second portion.

Claim 16. (Canceled).

17. (Original): The method of claim 1 wherein the oxide material consists essentially of aluminum oxide, and an entirety of the capacitor dielectric region intermediate the first and second electrode layers consists essentially of aluminum oxide.

18. (Currently Amended): The method of claim 1 wherein the first portion oxide material is formed without any measurable oxidation occurring of the metal nitride comprising first electrode layer.

19. (Original): The method of claim 1 wherein the second portion oxide material and the first portion oxide material are formed using the same pressure and same one or more precursors.

20. (Original): The method of claim 1 wherein the second portion oxide material is formed using identical conditions under which the first portion oxide material is formed but for different temperature.

21. (Original): The method of claim 1 wherein the first and second portions are formed in a common deposition chamber without removing the substrate from such chamber intermediate formation of the first and second portions.

22. (Original): The method of claim 1 wherein the precursor flowing during formation of the second portion oxide material is at a temperature which is at least 25°C higher than during formation of the first portion oxide material.

23. (Original): The method of claim 1 wherein the precursor flowing during formation of the second portion oxide material is at a temperature which is at least 50°C higher than during formation of the first portion oxide material.

24. (Original): The method of claim 1 wherein the precursor flowing during formation of the second portion oxide material is at a temperature which is at least 100°C higher than during formation of the first portion oxide material.

Claims 25-67 (Canceled).

68. (New): The method of claim 1 wherein the first portion oxide material is formed at a temperature of about 290°C.

69. (New): The method of claim 1 wherein the capacitor dielectric region is from 40 Angstroms to 60 Angstroms in thickness.

70. (New): The method of claim 1 wherein formation of the first and second portions is blanketly over the substrate.

71. (New): The method of claim 1 wherein formation of the first and second portions is only partially over the substrate.

72. (New): The method of claim 1 wherein the oxygen containing vapor precursor in formation of at least one of the first and second oxide portions comprises at least one of O₂, O₃, H₂O, NO₂, NO and an alcohol.

73. (New): The method of claim 72 wherein the oxygen containing vapor precursor in formation of at least one of the first and second oxide portions comprises an alcohol.

74. (New): The method of claim 73 wherein the alcohol comprises a polyol.

75. (New): The method of claim 1 wherein the first portion is formed by chemical vapor deposition and the second portion is formed by atomic layer deposition.

76. (New): The method of claim 1 wherein the second portion is formed by chemical vapor deposition and the first portion is formed by atomic layer deposition.